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%Female Rat Kidney
%Simulates the posterior mean parameter values from the MCMC analysis
%Plots simulation against the in vitro data

prepare @all

WESITG = 0 ;
WEDITG = 0 ;
CJVITG = 0 ;
Kidney2009
kk = [];
fkk = [];
tt = [];
km = [];

VVIAL= 0.01163;
VMED= 0.001;
VINJ=0.0002;
VAIR=VVIAL-VMED;
TSTOP= 1.0; TF=0.; TI=0.2;
PROT = 1.0;
P1=0.69;
%KL = 2.54*(0.6289855*60)/1000 ;
KG = 0.10 ; % 2.54*(0.434*60)/1000 ;
RLOSS = 0.001424 ;
CINT = 0.1 ;
MAXT = 0.01 ;

%Female Rat Kidney
a10a =[];
for pp = ID_540ppm : ID_2ppm
    A10 = FRatKid(1, pp)'*(VAIR+P1*VMED);

%MCMC Redo
    VMAX1 = 0.0036 ;
    KM1= 0.57 ;
    KG1 = 0.45

    start @nocallback
        tt = [tt, _time];
        kk = [kk, _ca1];
        km = [km, _cm1];
    a10a =[a10a, A10];
end % end of dose loop

%Time 50 ppm      132 ppm      264 ppm
mrk = [...
0      22.705      11.003      5.381 1.985 0.436 0.09
0.2    21.864      10.443      5.102 1.785 0.366 0.078
0.4    21.23 10.065      4.888 1.636 0.311 0.056
0.6    20.674      9.656 4.624 1.497 0.266 0.046
0.8    19.735      9.259 4.387 1.393 0.237 0.044
1      18.879      8.792 4.216 1.297 0.222 0.043 ];

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```
plot(tt(:,1), kk(:,1), tt(:,2), kk(:,2), tt(:,3), kk(:,3), tt(:,4),
kk(:,4), tt(:,5), kk(:,5), ...
mrk(:,1), mrk(:,2), mrk(:,1), mrk(:,3),mrk(:,1), mrk(:,4),mrk(:,1),
mrk(:,5),mrk(:,1), mrk(:,6),'femaleratkid.aps');
```